

# Passing One-Dimensional Arrays to Functions

```
int main()
{
    int a[5] = {0};
    fun( a );
    cout << a[0];
}
void fun( int b[] )
{
    *b = 5;
}
```

```
int main()
{
    int a[5] = {0};
    fun( a );
    cout << a[0];
}
void fun( int *b )
{
    *b = 5;
}
```

# Passing One-Dimensional Arrays to Functions

```
int main()
{
    int a[5] = {0};
    fun( a );
    cout << a[0];
}
void fun( int *b )
{
    *b = 5;
}
```

```
int main()
{
    int a[5] = {0};
    int *b = a;
    *b = 5;
    cout << a[0];
}
```

# Passing One-Dimensional Arrays to Functions

```
int main()
{
    int a[5] = {0};
    int *b = a;
    *b = 5;
    cout << a[0];
}
```

```
int main()
{
    int a[5] = {0};
    int *b;
    b = a;
    *b = 5;
    cout << a[0];
}
```

# Passing Two-Dimensional Arrays to Functions

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int b[][4] )
{
    b[0][2] = 5;
}
```

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    b[0][2] = 5;
}
```

# Passing Two-Dimensional Arrays to Functions

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int b[][4] )
{
    (*b)[2] = 5;
}
```

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    (*b)[2] = 5;
}
```

# Passing Two-Dimensional Arrays to Functions

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    (*b)[2] = 5;
}
```

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    (*b)[2] = 5;
    cout << a[0][2];
}
```

# Passing Two-Dimensional Arrays to Functions

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    (*b)[2] = 5;
    cout << a[0][2];
}
```

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4];
    b = a;
    (*b)[2] = 5;
    cout << a[0][2];
}
```

b  0012FF3C

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    b[0][2] = 2;
    cout << a[0][2];
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	0	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C



b 0012FF40 ~~0012FF3C~~

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    b[0][2] = 2;
    cout << a[0][2];
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	0	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C

b 0012FF40 ~~0012FF3C~~

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    b[0][2] = 2;
    cout << a[0][2];
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	2	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C

b 0012FF50 0012FF3C

```
int main()
{
    int a[4][4] = {0};
    int (*b)[4] = a;
    b[0][2] = 2;
    cout << a[0][2];
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	2	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C



```

int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    b[0][2] = 2;
    b++;
}

```

**b points to array a[0]**

a[0][0]	0	0012FF40
a[0][1]	0	0012FF44
a[0][2]	0	0012FF48
a[0][3]	0	0012FF4C
a[1][0]	0	0012FF50
a[1][1]	0	0012FF54
a[1][2]	0	0012FF58
a[1][3]	0	0012FF5C
a[2][0]	0	0012FF60
a[2][1]	0	0012FF64
a[2][2]	0	0012FF68
a[2][3]	0	0012FF6C
a[3][0]	0	0012FF70
a[3][1]	0	0012FF74
a[3][2]	0	0012FF78
a[3][3]	0	0012FF7C

b 0012FF40 ~~0012FF3C~~

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    b[0][2] = 2;
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	0	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C

b 0012FF40 ~~0012FF3C~~

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

void fun( int (*b)[4] )
{
    b[0][2] = 2;
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	2	0012FF48
b[0][3]	a[0][3]	0	0012FF4C
b[1][0]	a[1][0]	0	0012FF50
b[1][1]	a[1][1]	0	0012FF54
b[1][2]	a[1][2]	0	0012FF58
b[1][3]	a[1][3]	0	0012FF5C
b[2][0]	a[2][0]	0	0012FF60
b[2][1]	a[2][1]	0	0012FF64
b[2][2]	a[2][2]	0	0012FF68
b[2][3]	a[2][3]	0	0012FF6C
b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C

b 0012FF50 0012FF3C

```
int main()
{
    int a[4][4] = {0};
    fun( a );
    cout << a[0][2];
}

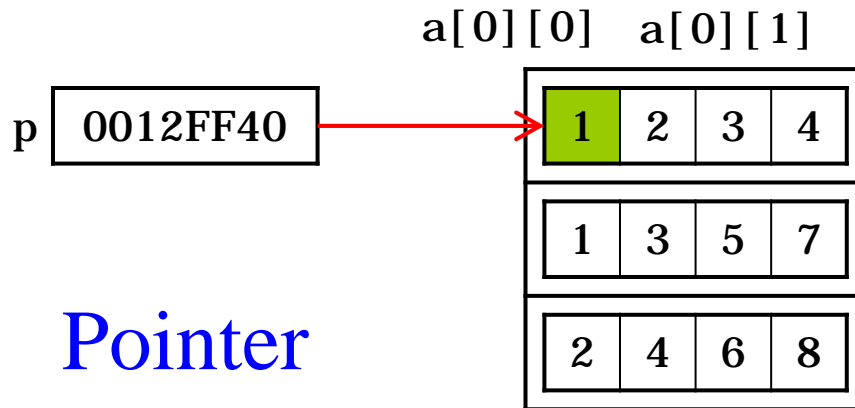
void fun( int (*b)[4] )
{
    b[0][2] = 2;
    b++;
}
```

**b points to array a[0]**

b[0][0]	a[0][0]	0	0012FF40
b[0][1]	a[0][1]	0	0012FF44
b[0][2]	a[0][2]	2	0012FF48
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b[3][0]	a[3][0]	0	0012FF70
b[3][1]	a[3][1]	0	0012FF74
b[3][2]	a[3][2]	0	0012FF78
b[3][3]	a[3][3]	0	0012FF7C



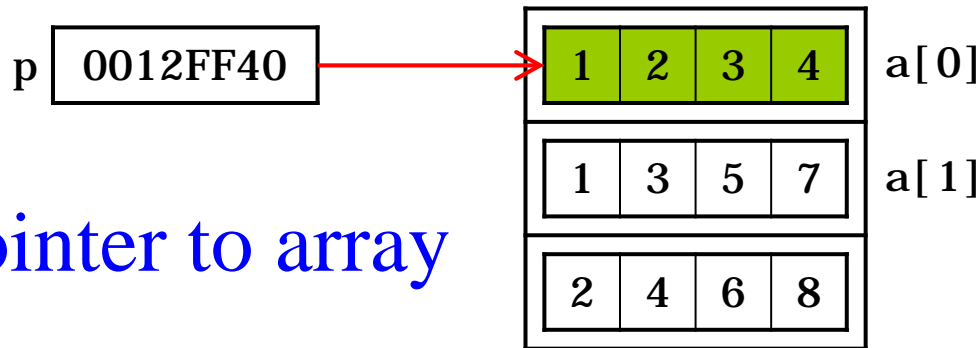




Pointer

```
int a[3][4] =
    { { 1, 2, 3, 4 },
      { 1, 3, 5, 7 },
      { 2, 4, 6, 8 } };

int *p;
p = a[0];
p = &a[0][0];
p++;
```



Pointer to array

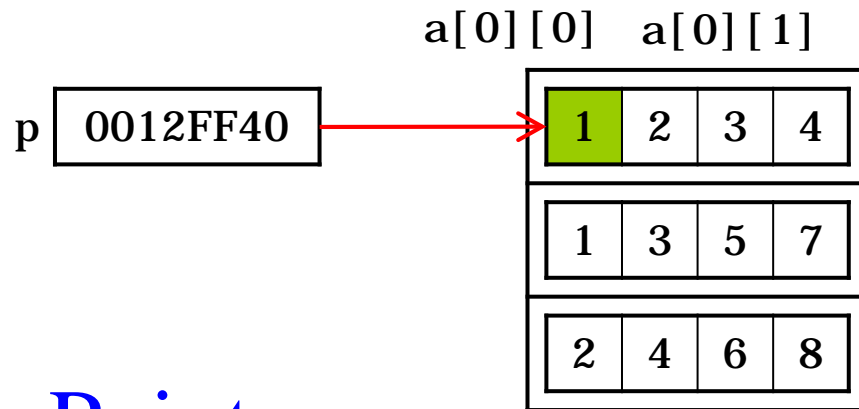
```
int a[3][4] =
    { { 1, 2, 3, 4 },
      { 1, 3, 5, 7 },
      { 2, 4, 6, 8 } };

int (*p)[4];
p = a;
p = &a[0];
p++;
```



Pointer to array

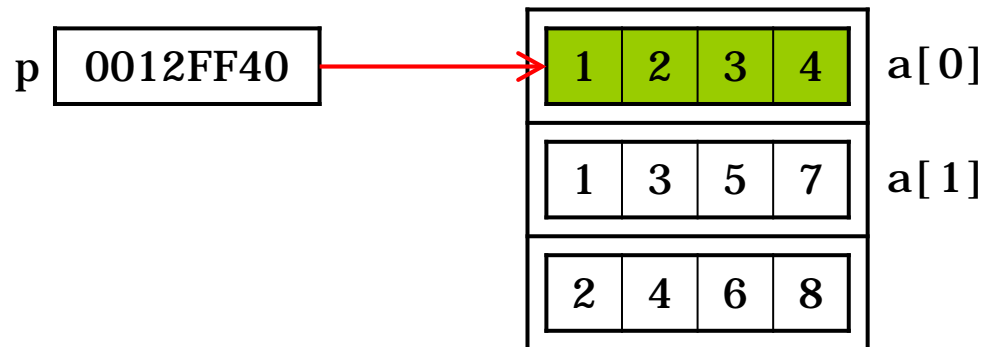
```
int a[4] = { 1, 2, 3, 4 };
int (*p)[4];
p = &a;
```



Pointer

```
int a[3][4] =
{ { 1, 2, 3, 4 },
  { 1, 3, 5, 7 },
  { 2, 4, 6, 8 } };

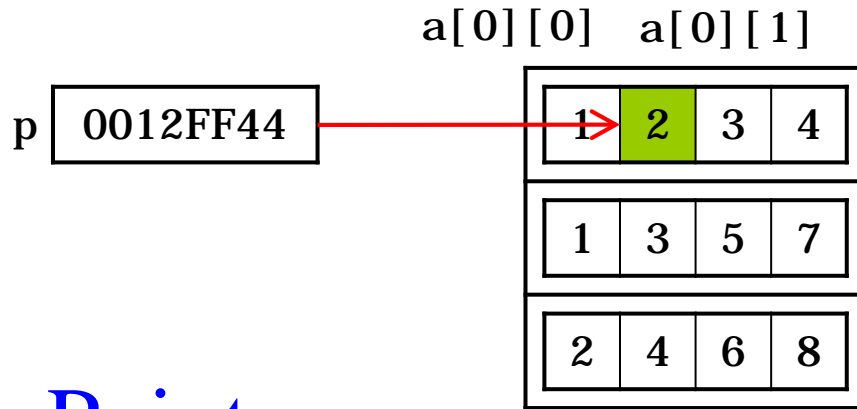
int *p = a[0];
int *p = &a[0][0];
int *p;
p = a[0];
p++;
```



Pointer to array

```
int a[3][4] =
{ { 1, 2, 3, 4 },
  { 1, 3, 5, 7 },
  { 2, 4, 6, 8 } };

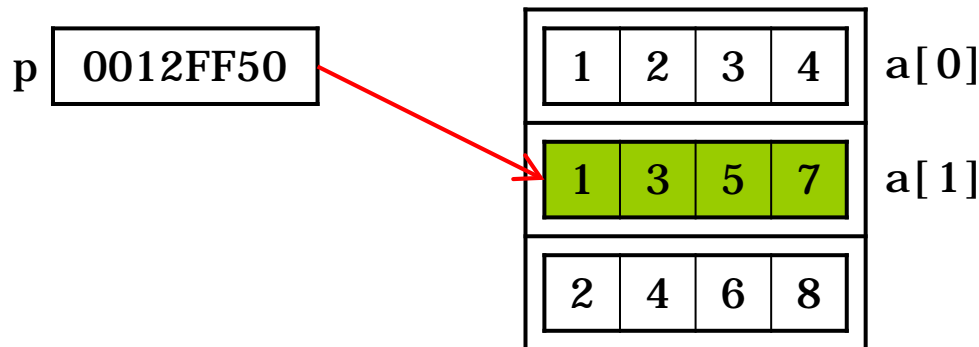
int (*p)[4] = a;
int (*p)[4] = &a[0];
int (*p)[4];
p = a;
p++;
```



Pointer

```
int a[3][4] =
{ { 1, 2, 3, 4 },
  { 1, 3, 5, 7 },
  { 2, 4, 6, 8 } };

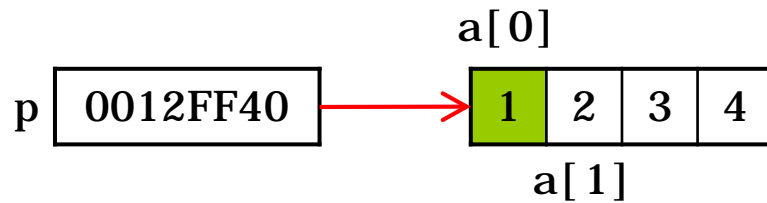
int *p = a[0];
int *p = &a[0][0];
int *p;
p = a[0];
p++;
```



Pointer to array

```
int a[3][4] =
{ { 1, 2, 3, 4 },
  { 1, 3, 5, 7 },
  { 2, 4, 6, 8 } };

int (*p)[4] = a;
int (*p)[4] = &a[0];
int (*p)[4];
p = a;
p++;
```



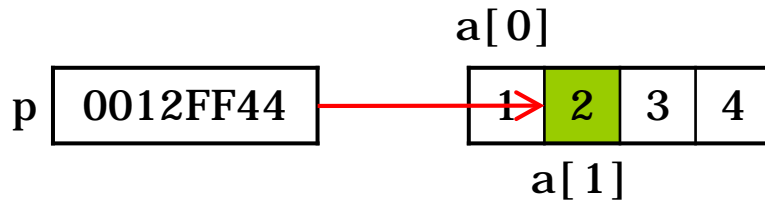
## Pointer

```
int a[4] = { 1, 2, 3, 4 };
int *p = a;
int *p = &a[0];
int *p;
p = a;
p++;
```



## Pointer to array

```
int a[4] = { 1, 2, 3, 4 };
int (*p)[4] = &a;
int (*p)[4];
p = &a;
```



## Pointer

```
int a[4] = { 1, 2, 3, 4 };
int *p = a;
int *p = &a[0];
int *p;
p = a;
p++;
```



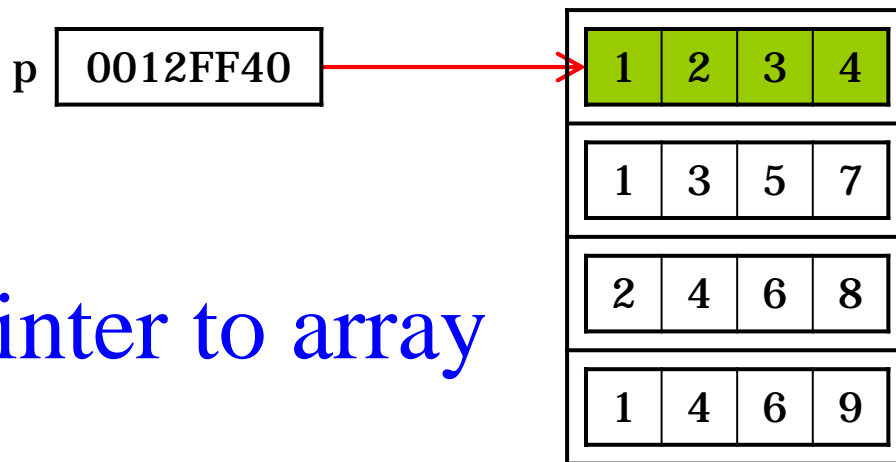
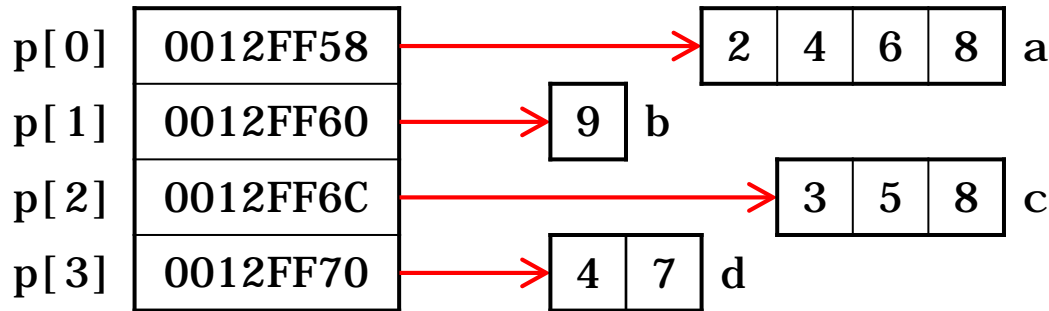
## Pointer to array

```
int a[4] = { 1, 2, 3, 4 };
int (*p)[4] = &a;
int (*p)[4];
p = &a;
```

```

int a[4] = { 2, 4, 6, 8 };
int b = 9;
int c[3] = { 3, 5, 8 };
int d[2] = { 4, 7 };
int *(p[4]) = { a, &b, c, d };
int *p[4] = { a, &b, c, d };

```



Pointer to array

```

int *(p[4]);
p[0] = a;
p[1] = &b;
p[2] = c;
p[3] = d;

```

Array of  
pointers

```

int a[4][4] =
{ { 1, 2, 3, 4 },
  { 1, 3, 5, 7 },
  { 2, 4, 6, 8 },
  { 1, 4, 6, 9 } };
int (*p)[4] = a;
int (*p)[4];
p = a;

```

```
int main()
{
    int a[4] = { 2, 4, 6, 8 };
    int b = 9;
    int c[3] = { 3, 5, 8 };
    int d[2] = { 4, 7 };
    int *(p[4]) = { a, &b, c, d };
}
```



```
int main()
{
    int a[4] = { 2, 4, 6, 8 };
    int b = 9;
    int c[3] = { 3, 5, 8 };
    int d[2] = { 4, 7 };
    int *(p[4]);

    p[0] = a;
    p[1] = &b;
    p[2] = c;
    p[3] = d;
}
```